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ABSTRACT

Noting that many children in the United States are not well nourished despite the recent economic boom, the state of Maryland began the Maryland Meals for Achievement (MMFA) program, a demonstration project to see if providing a classroom breakfast free to all students can improve student nutrition and academic achievement. This interim report summarizes and explains findings from the MMFA program. The MMFA project was implemented in six Maryland school districts in fall 1998, with comparison schools selected from the same district as participating schools. Evaluation data were obtained from surveys, school records, and individual interviews with administrators, teachers and other school staff, parents, and students. The findings indicated that the classroom breakfast program was associated with improved student achievement, behavior, and attention, and decreased school absences and complaints of hunger. The overall conclusion of the report is that the Maryland Meals for Achievement has led to modest but educationally important improvements for participating students. Two appendices contain overheads summarizing the findings and the data collection instruments. (KB)

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ED 445 797

Effects of a Universally Free, In-Classroom School Breakfast Program

Results from the Second Year of the Maryland Meals for Achievement Evaluation

Interim Report

March 25, 2000

(with a new preface and notes on student hunger and nutrition)

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PREFACE

As noted in the previous version of this report, the data from this study continue to come in, creating the need for additions as well as chances to address questions noted by readers. This version of the document contains some additional preliminary data on individual students' reports of hunger and nutrition and their link to school breakfast participation, as well as clarifications of some questions that have come up regarding grades and other outcomes.

More context was needed for some of the findings reported here, so a number of whole sections have been added, not to mention many sentences and sentences throughout the text. After review by an outside research consultant, the wording of a number of ambiguous or not well explained points has been changed and the statistical reporting has been tightened up to improve clarity.

The overall conclusion of the data analysis so far is that the Maryland Meals for Achievement has led to modest but educationally important improvements for the students who have participated in the program. Cautiously optimistic is a phrase that comes to mind. The five school sample is too small to permit definitive conclusions about the effects of the program and the school-wide outcomes on the "official" school record variables like standardized test scores and attendance for the single year comparisons showed no improvements that were statistically significant and only one comparison reached statistical significance over a two year period.

Statistically significant improvements in scores for groups of individual students in the interview sample who increased their breakfast participation were evident over the first year for some of the outcomes again seemed to get stronger when a two year view was taken. Here too the small sample size suggests the need for cautious interpretations since it cannot be determined from such a small sample whether the findings will hold up over time or in larger samples.

The purpose of this report has been to try to summarize and explain a large number of findings about several schools over several years. There has been some pressure to hurry because food service and governmental officials have wanted to know results that often take social scientists several years to compile and understand.

So these are the findings to date. They are neither complete nor in publishable form…but they are accurate and we believe they show trends that suggest that classroom breakfast programs like MMFA are associated with measurable improvements in student achievement. We believe that most researchers would agree with our cautiously optimistic conclusions although some would say that very little has been proven so far.

This is an important point and it deserves restating. The U.S. Congress has just approved a multimillion-dollar project designed to test the effects of free school breakfast programs like MMFA. The federal evaluation will collect school wide data on more than 100 schools and individual data on more than 4000 students because statistical experts believe that samples this large are necessary to definitively test the effects of such programs.

Until we have data from samples this large, definitive answers about the effects of these programs are not possible. Smaller samples like MMFA can and should be used to demonstrate and explore preliminary patterns. We believe that this study of just a handful of schools has done its job by showing positive trends for the students in these schools and by concluding that for now, continuing the program and gradually expanding it makes a great deal of sense.

EXECUTIVE SUMMARY

Since research shows that many children in this country are not well nourished despite the recent economic boom, the state of Maryland has started a demonstration project to see if providing breakfast in the classroom, free to all students who want it, can improve student nutrition and academic achievement. The most recent findings from the evaluation of this program--which suggest that it has been associated with improvements in student achievement--are presented in the next few pages.

Although the state of Maryland is a leader in the area of free school breakfast programs, it is by no means alone. Motivated by the same concerns about child nutrition and learning, Minnesota and Massachusetts have each just begun their own universally free school breakfast pilot programs each providing about one to two million dollars per year to fund them. In a separate initiative, the U.S. Government has authorized a 13 million-dollar free school breakfast demonstration project which is slated to begin in the fall of 2000.

The new Minnesota program began in September of 1999 in more than 300 schools and may provide the definitive answer to the question of whether universal school breakfast programs have an impact on standardized test scores. The Massachusetts program will reach about 100 schools but is only being evaluated in fourteen schools from Boston.

The federal program will probably be about the size of the Massachusetts program and should provide a truly comprehensive evaluation of all of the effects of universal school breakfast programs…but the data will not be available until the end of 2002. In the meantime then, the Maryland program, although smaller than the other projects, offers the most comprehensive evaluation of universal school breakfast that is currently available.

The current report presents the findings from the Maryland evaluation from the fall of 1999 and is very much a work in progress. It was designed to help state and local officials and food service staff assess the program as they considered whether to continue or expand it next year. New material and sections from the May, 1999 report have been inserted into this report to provide a more complete description of the methods used in obtaining the current data and/or to put the results of this report into a larger context. The "Evaluation Design" and "Summary of Major Findings From Previous Phases" sections on pages 9-14 are the largest of these.

The critical question is whether the MMFA Classroom Breakfast program has had an impact on student achievement. The answer appears to be yes: a number of clear, statistically significant, and educationally important associations between participation in the MMFA program and student learning, behavior, and nutrition were found, as were higher levels of student, parent, and staff satisfaction with the school breakfast program. These benefits appeared to grow even larger during the second year of the program and to began to diminish in the schools that discontinued the program after one year.

On the other hand, the analyses reported here failed to find statistically significant associations in any of the first year comparisons of school record variables like standardized test scores and it is important to note that even some of the positive associations could have been due to chance given the fact that the sample of five schools is so small. So cautious optimism in attributing the positive results to the program is the most prudent interpretation for now.

Details about the design of the program and the specific major findings from this and last year's evaluation are summarized on the next three pages.

DESIGN OF THE PROGRAM

The Maryland Meals for Achievement (MMFA) Project began in six school districts from around the State of Maryland in the fall of 1998. The program is continuing for another school year in three of these schools and six other schools which were added for the 1999-2000 school year. For the data analyses, prior to the start of the program a comparison school from the same district was selected for each of the old and new classroom breakfast schools. So, twelve non-classroom breakfast schools were included in the data analysis in addition to the twelve current or past classroom breakfast schools. A fuller description of the design of the program, evaluation design, and results for the first year of MMFA program can be found in the-end-of-the-year report from May of 1999 (Murphy, et al, 1999). Descriptions of the program and evaluation design also appear in this document in a Background section on pages 8-13.

The full MMFA evaluation combines data from surveys, school records, and individual interviews, with administrators, teachers and other school staff, parents, and students as respondents. The main questions have to do with the effects of the program on student achievement and nutrition, but other questions include staff, parent, and student satisfaction with the program. Reports on the program include the first interim report that was prepared during January of 1999, an end of the school year report in May 1999, this report in February of 2000, and a planned final report that is due in July of 2000.

The most important question for Maryland policy makers is whether the universally free classroom breakfast has had measurable effects on student achievement. Although the most commonly requested findings are for "hard" data like standardized test scores and other school record variables like attendance, tardiness, etc., these variables are probably not the best way to assess whether there has been an increase in student achievement.

When immediate feedback is needed, the single best source of data on student achievement is probably the ratings of the teachers who work with the students on a daily basis. As a part of the Maryland Meals for Achievement Evaluation, teachers and administrators were asked to rate student achievement, attention, and behavior as well as complaints of hunger and satisfaction with the breakfast program. These ratings, as well as official school-wide data are summarized on the following pages.

SUMMARY OF MAJOR FINDINGS FROM YEAR 2

School-wide data on both MSPAP and attendance show greater gains for MMFA classroom breakfast schools than for comparison schools or statewide averages. Although the single year data on MMFA vs. control schools showed only small and statistically nonsignificant variations, viewed from the perspective of two years, the patterns of the data were within a range that statisticians would consider marginally significant for attendance ($p < .08$). And although the two-year MSPAP findings were not statistically significant, they were in the predicted direction ($p. < .13$).

School-wide absence rates dropped more than a full percentage point in the MMFA schools but stayed the same in the control schools over two years. This amounted to an increase of two full days of attendance per year in the MMFA schools but not in the controls.

On the MSPAP over two years, the MMFA schools showed nearly twice the rate of improvement (22%) in the percentage of students who passed at the satisfactory level on MSPAP scores as matched comparison schools from the same counties (13% improvement) and four times the rate of improvement as the statewide average (5% improvement).

Although the improvement in MSPAP scores was just outside the range required for statistical significance, it was of about the same magnitude as the MSPAP improvement found in another Maryland classroom breakfast study (in Baltimore) last year, where the larger sample size did provide results that were fully statistically significant over two years and marginally significant over just a single year. As yet unreleased results from the evaluation of a free breakfast program in Minnesota showed effects of the same magnitude as those found in Maryland, that did reach statistical significance in a sample of forty schools. Taken together, the findings from all of these studies are remarkably similar and suggest that free breakfast programs are associated with improvements of several percentage points per year in standardized test scores.

Teachers rate student attention and behavior as having improved significantly more in MMFA schools than in control schools. For the second consecutive year, surveys of all the staff in the MMFA classroom breakfast and control schools provided consistent and statistically significant results documenting that teachers and other staff rated student attention and behavior as having improved more in the classroom breakfast schools than in the comparison schools. In the face of such changes, few educators would dispute that student achievement should increase.

Data from individual student interviews and school records confirm the patterns of improvements in grades and attendance for students who increase their school breakfast participation. Interviews conducted last fall and spring (before and after the MMFA program began) with more than one hundred students showed that students who increased their school breakfast participation the most had bigger gains in academic achievement and attendance than students who increased their breakfast participation a little or students who did not increase their school breakfast participation.

In summary, the current data analysis suggests that school-wide improvements in achievement, attendance, attention, and behavior did occur in Maryland schools that began a universally free classroom breakfast program but not in matched control schools.

EVALUATION DESIGN AND BACKGROUND

The Maryland Meals for Achievement Project established a universally free, in-classroom school breakfast program in six school districts from around the state of Maryland in the fall of 1998 and added two districts and lost three by the start of the 1999-2000 school year. This report presents data from the evaluation of the program.

The evaluation was designed to take place in nine phases based on different types of data collection. Although the most commonly requested findings on the effects of a universally free breakfast in the classroom program are "hard" data like standardized test scores and other school record variables like attendance, tardiness, etc., these data take months or even years to collect. Until they became available, other outcomes of the program were studied not only to provide a preliminary estimate of the program's effects within a few months, but also because other indicators (like the reports by experienced teachers and other staff) may be of equal or even greater importance in providing an accurate picture on the effects of the breakfast program.

The *first phase of the MMFA evaluation* had to do with assessing the immediate and relatively short-term effects of the new breakfast program on **school record variables** like attendance, tardiness, disciplinary incidents, and visits to the school nurse in the six free breakfast schools. In these schools, data from the first term after the MMFA began were also compared with the same term from the previous school year. The same variables were assessed in six matched control schools (one from each of the MMFA school districts) for the first term of the current and past school years.[1]

The *second phase of the MMFA evaluation* involved **interviews** with students and their parents. Student psychological well being and behavior were assessed through standardized questionnaires filled out by parents and students. These questionnaire measures and others which assessed child hunger, home and school breakfast participation, nutrition, and demographic variables were administered during **face to face interviews** conducted with a sub sample of students and their parents in the fall of 1998 before the free breakfast program began. Additional information on the sample and methods are presented later in this report in the section devoted to the interviews.

The *third phase of the evaluation* examined student, parent, and school staff reports of satisfaction with the MMFA breakfast program, estimates by these respondents of whether there were effects on student learning or behavior, and feedback to state and local food service staff about the program. Brief **survey questionnaires** assessing these indicators were collected from students, parents, and staff in the Fall of 1998 about two months after the program started.

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[1] Although the term "control" school is not completely appropriate in a statistical sense for this description of a naturalistic, non experimental design, the term has been used throughout this report to because each of the school districts that participated in the MMFA program did select two schools at the start of the evaluation, one to try out the new classroom breakfast "intervention" and one to act as a "control" by continuing the school districts routine procedures for billing and serving school breakfast.

In February of 1999, the *fourth phase of the evaluation* began when the teachers and other staff in the six free breakfast schools and in six control schools were asked to complete **a different one page survey** assessing changes in student behavior, achievement, and school climate in their schools over the past year. The answers by the staff in each school were compared with the answers to the same questions provided by the staff in a control school from the same school district which did not implement a free breakfast program.

The fifth phase of the MMFA evaluation took place during May and June of 1999 when the students in the fall interview sample were re-interviewed. Students (but not parents) were re-interviewed and their school records for two school years were copied and analyzed so that changes in the interview measures from fall to spring and in students' school record measures like grade point averages and attendance from the previous (97-98) to the current (98-99) school years could be assessed (pre to post-MMFA).

The sixth phase of the MMFA evaluation took place from July 1999 through February 2000 as individual student and school wide data on test scores, attendance, etc for the 1998-99 school year became available. These scores were requested from the participating school districts and/or downloaded from state/local district web sites so that changes in norm referenced standardized test scores like the Comprehensive Test of Basic Skills (CTBS) could be examined for both individual students and as school wide averages. School wide averages on the Maryland School Performance Assessment Program (MSPAP) for the two years before (1996-97 and 97-98) and first year of the MMFA program (1998-99). These data are the major focus of the findings presented at the outset of this report.

The seventh phase of the MMFA evaluation involved another round of student, parent, and staff survey forms that were mailed out during the winter of 1999-2000 to the twelve MMFA schools (3 continuing, 6 new, and 3 drop outs) and the twelve control schools. As of this writing, more than 1400 of the one-page forms have been received back by the evaluation team.

The eighth phase of the MMFA evaluation involves principals' reports on a one page form that provides data on school wide indicators like attendance, tardiness, nurse visits, etc for three months in the fall of 1999-2000 and the fall of 1997-98 (pre MMFA for all) school years. These data are still being received and analyzed and will not be presented until the final evaluation report in the summer or fall of 2000 when the year end data for the schools becomes available.

SUMMARY OF MAJOR FINDINGS FROM PREVIOUS PHASES OF THE MMFA PROGRAM

The results presented at great length in the first year report of the MMFA program are summarized below to provide a context for the second year findings. The entire report is available from the Nutrition and Transportation Services Branch of the Maryland State Department of Education or the evaluator (Murphy, et al, 1999).

The *first phase of the MMFA evaluation* had to do with assessing the immediate and relatively short-term effects of the new breakfast program on **school record variables** like attendance, tardiness, disciplinary incidents, and visits to the school nurse in the six free breakfast schools. Results showed that the free breakfast and control schools were similar on virtually all dimensions prior to the start of the free breakfast program but that after it started, school breakfast participation had more than tripled in the free breakfast schools and stayed the same in the control schools.

MMFA schools showed a marginally significant decrease in nurse visits after the start of the program compared to the control schools, where the number of visits to the school nurse actually increased. There were no significant differences in the rates of absences, tardiness, etc. but the lack of differences appeared to be due to the small time intervals studied: November of 1998 (just post MMFA) vs. November of 1997.

The *second phase of the MMFA evaluation* involved **interviews** with students and their parents. The reports of parents and students about school breakfast participation were significantly related to staff reports, thus providing support for the validity of parent and student reports about the frequency of breakfast consumption at home. As in previous studies by the research team, the overall rate of student school breakfast participation was related to psychosocial functioning at baseline, before the intervention started. Students who ate school breakfast often had significantly lower (less impaired) scores on the parent completed checklist of emotional and behavioral symptoms (PSC) than students who ate school breakfast sometimes or rarely. A similar trend was evident on the student completed symptom checklist (PSC-Y), although this was not statistically significant.

Home breakfast participation at baseline was significantly related to school grades. Students who ate breakfast at home often showed about a half a grade higher grade point average (3.0) than students who ate sometimes or rarely. Students who ate breakfast at home everyday were absent and tardy 1-2 days less often and had lower psychological symptom scores than students who ate breakfast at home rarely, although these differences failed to reach statistical significance. Total (combined home + school) breakfast consumption rate was significantly related to both tardiness and parent reported psychosocial symptom scores. Grades and attendance rates were best for students who ate breakfast most days and worst for students who ate rarely, although these differences were not statistically significant.

Child hunger was reported by the parents of 8% of all students and an additional 26% of the students in this low-income sample were coded as having had at least some experiences of hunger. As in previous studies by the research team, hungry and at risk children showed significantly more emotional and behavioral problems.

Change in *school* breakfast participation was related to a significant decrease in tardiness and a marginally significant decrease in absence rate, with students who had the greatest increase in breakfast participation showing the greatest decrease in tardiness and absences.

The *third phase of the evaluation* involved a one-page survey that was distributed to more than 1000 students, parents, and staff to provide quick feedback on the program. Results showed that the overwhelming majority (75%) of respondents (parents, staff and students) liked the program a lot or a little and the majority (65%) of respondents believed it had helped the students to learn and/or behave better. The most commonly mentioned effects of the program by all respondent groups were improved attention and more energy. Parents were the respondent group most strongly in favor of the free breakfast program with more than 80% reporting that they liked the program a lot and another 12% liking it a little. Only 3% of the parent respondents stated that they did not like the program.

In the *fourth phase of the evaluation* the teachers and other staff in the six free breakfast schools and in six control schools were asked to complete **a different one page survey** assessing changes in student behavior, achievement, and school climate in their schools over the past year. With a design that polled staff members from control as well as free breakfast schools and a response rate of about 75% of all staff in all of the schools, the Winter Survey demonstrated that according to expert informants (teachers, administrators and other staff) there was statistically significant and remarkably consistent evidence that student attention, behavior, and attitudes had improved more in the free breakfast schools than in the control schools.

Student satisfaction with the overall school breakfast program was significantly better, as was parent overall satisfaction with the schools, and staff satisfaction with their own jobs in the free breakfast but not in the control schools. Student complaints of hunger and of minor aches and pains decreased significantly. Although there were significant differences between the counties in their ratings on all of the questions, on all but one question, in at least four out of five districts the free breakfast schools showed higher positive ratings than the control schools. Positive ratings were even more consistent by job categories. In virtually all areas assessed, the different types of staff from the free breakfast schools were significantly more likely to see improvement than staff from the control schools.

Taken together, the results of the first four phases of the MMFA evaluation confirmed previous reports that students who ate school breakfast every day had significantly higher levels of school attendance and psychological adjustment than students who ate breakfast less often. Results also showed that a universally free, in- classroom breakfast program was extremely effective in increasing school breakfast participation. Although longitudinal changes in individual students could not be adequately evaluated until the end of the first full school year, preliminary analyses showed that students who increased their school breakfast participation had greater gains in school attendance and punctuality than

students who did not increase their breakfast participation or increased less. Perhaps even more importantly, there were significant school-wide improvements in student attention, behavior, and energy, according to staff reports, and trends in the right direction for attendance and discipline according to official school records. . . These results in turn suggested that the free in-classroom breakfast program could be an effective method for improving educational outcomes and the evaluation team recommended that it should continue to be implemented and expanded during the 1999-2000 school year.

SPECIFIC MAJOR YEAR 2 FINDINGS

School-wide findings for school record variables and school-wide data on both MSPAP and attendance show greater gains for MMFA classroom breakfast schools than for comparison schools or statewide averages. Although the single year data on MMFA vs. control schools showed only small variations, viewed from the perspective of two years, the patterns of the data approached statistical significance for both attendance ($p < .08$) and for the MSPAP ($p < .13$). The MMFA schools showed an average gain of six points on the MSPAP over the two-year period, compared to a four-point gain in the control schools and a two-point gain in elementary schools statewide.

Maryland Meals for Achievement/MSPAP Results

The table below shows school-wide averages and changes for total MSPAP scores over two years before and one year after classroom breakfast in 5 MMFA schools. These MMFA schools are compared to 5 control schools and state averages. From 1997-1999, the increase in the percentage of students in the MMFA schools who passed the MSPAP at the satisfactory level (6.1%) was greater than that of either the control schools (4.1%) or the state average (2.0). Viewed from a slightly different perspective, the percentage of students passing the MSPAP increased 22% in the MMFA schools, 11% in the control schools, and 5% in all of the schools in the states.

Table 1: Percentage of students passing MSPAP at satisfactory level.

	1997	1998	1999	Change 1998-99	Change 97-99
5 MMFA schools	28.2	37.6	34.3	-3.4	+6.1
5 Control Schools	32.6	35.7	36.7	+1.0	+4.1
State Averages	**41.8**	**44.1**	**43.8**	**-0.3**	**+2. 0**

Note: F=1.09, P = .13, not statistically significant

These findings were replicated and extended by findings from an almost identical but much larger study that took place in the city of Baltimore at exactly the same time. The Baltimore sample was six times larger than the Maryland sample, with 31 schools beginning a universally free school classroom breakfast program in the fall of 1998 and 15 similar schools acting as controls.

As shown in Table 2 below, in the Baltimore sample, the average increase over a two year period was five points for the classroom breakfast schools and two points in the control schools, a difference that was virtually identical to the difference found in the MMFA schools. In the larger sample from Baltimore, the difference between classroom breakfast and control schools did reach statistical significance (ANOVA, $F= 4.55$, $p < .05$) for the two year comparison and

did reach statistical significance (ANOVA, F= 4.55, p < .05) for the two year comparison and was marginally significant (ANOVA , F=3.30, p < .10) over a single year, with a 2 point improvement average MSPAP percentage in the classroom breakfast schools (vs. a 1 point drop in the control schools).

Table 2: School-wide MSPAP scores and changes for Baltimore Schools.

	1997	1998	1999	Change 1998-99	Change 97-99
26 UFB schools	11.4	14.3	16.7	+2.4[t]	+5.4*
12 Control Schools	9.6	11.8	11.1	-0.7[t]	+1.5*
State Averages	**41.8**	**44.1**	**43.8**	**-0.3**	**+2. 0**

Note: The free classroom breakfast program began in 31 schools for the 1998-99 school year in Baltimore, 15 of them Provision II schools and 17 that were funded by the Weinberg Foundation. Since there were 14 other Provision II schools in Baltimore, these schools were used as controls. With missing MSPAP data for eight schools in 1997 and/or 1998, there was complete three-year data on 38 schools, 26 with UFB and 12 controls. The data for these schools is presented above.

[T] *For differences between USB and control school means, ANOVA: F=3.3, p=.08 for difference between 1999 vs. 1998; F=4.56, p < .05 for difference between 1999 vs. 1997.*

It should also be noted that in the Baltimore sample, the gains for the classroom breakfast schools were also larger than the gains found in the city as a whole for the same period of time. In the Maryland sample, the gains for the MMFA schools were larger than those found for the average of all of the elementary schools in the state over the same period of time.

These findings strongly suggest that a universally free classroom school breakfast program is associated with a statistically significant improvement in standardized test scores and that school meals really are associated with improved achievement.

Maryland Meals for Achievement /Attendance Results

Table 3 (below) describes the data on school-wide attendance rates and changes over the two years before and one-year after the MMFA classroom breakfast program began. As with the data on MSPAP scores, it appears that the MMFA schools show bigger improvement than the control schools over the first year of the program but that the two-year window provides a somewhat better view.

The difference between MMFA and control schools over the first year of the program was not statistically significant but the difference over two years was marginally significant (F=4.25, p. < .08).

Table 3: School-wide attendance rate changes.

	1997	1998	1999	Change 1998-99	Change 97-99
MMFA (5) schools	94.5	95.4	95.6	+0.2	+1.1
Control Schools	95.0	94.9	95.0	+0.1	+0.0
State Averages	**95.3**	**95.5**	**95.3**	**-0.2**	**+0.0**

INDIVIDUAL STUDENT RE-INTERVIEWS

METHODS

As noted above, both before and after the classroom breakfast program began, students from three of the participating schools were interviewed. Their parents were also interviewed and asked to give consent for the research team to access the students' school records for their grades and attendance for the current and two past school years. Year-end grades were used in all cases. Letter grades were converted to numbers on the traditional 4 point scale (A=4; B=3; C=2; D=1; F=0). Grade point average was calculated as the mean of grades in five subjects (Reading, math, science, social studies, and gym). Change in GPA was calculated by subtracting the earlier year from the later year (98-99 minus 97-98; 98-99 minus 96-97). Negative GPA change scores indicate a decrease in grades over time.

Student school breakfast participation was coded by having a school employee write down the names of the students who took the school breakfast each day for a week, in the fall, before the MMFA program began, and in the spring, after it had been running for most of the school year. For each student, the rate of school breakfast participation at each time was calculated as the number of breakfasts taken in the sample week divided by the number of days that student attended school that week. Change in school breakfast participation rate was calculated by subtracting the beginning of the year rate (pre MMFA) from the end of the year rate (post MMFA). Positive school breakfast participation change scores indicate an increase in participation over time.

School breakfast participation groups were created by clustering students according to a recoding of their exact rates of participation. Students who ate breakfast at school from zero to nineteen percent of the time were coded as eating school breakfast rarely. Students who ate breakfast at school from twenty to seventy nine percent of the time were coded as eating sometimes. Students who ate breakfast at school eighty percent of time or more often were coded as eating school breakfast often.

As noted in our previous report, school breakfast participation increased dramatically in the MMFA schools from 25% of all students in the five schools in November of 1997 (pre MMFA) to 78% of all students in November 1998 (post MMFA). In the five control schools, breakfast participation actually decreased by one percentage point (from 23% to 22%) over the same interval. The trends for the individual students in the interview sample were quite similar.

As shown in Table 4a (below) the average daily school breakfast participation for these students increased from 26% at the beginning of the school year before the MMFA program began to 84% at the end of the first year of the program. Categorical analyses showed a major decline in the percentage of students eating school breakfast rarely/never and a major increase in the percentage of ate school breakfast often. Both of these differences were statistically significant (Chi square = 9.6; $p < .05$; $t = -13.1$, $p < .001$).

Table 4a: Individual student school breakfast participation rates before and after MMFA

	pre MMFA	post MMFA
School breakfast participation rate groups pre and post MMFA		
Rarely	59 (55%)	7 (7%)
Sometimes	37 (35%)	22 (21%)
Often	11 (10%)	78 (73%)
Average daily participation	26%	84%

Note: Change in rates of school breakfast participation showed significant increases using both categorical (Chisquare = 9.6; $p < .05$) and parametric statistics (t-test pairs $t = -13.1$, $pn < .001$).

The analysis turns next to the question of the impact of changes in school breakfast participation on grades, Unfortunately for the analysis of grade point averages and changes, one of the three schools selected for the interview study had changed its grading system from traditional grades to a satisfactory through unsatisfactory scale beginning in the fall of 1998, so the possibility of analyzing changes in grade point averages for about half of the possible interview subjects was lost. Still, however, grade point average data on 65 of the original 113 students at for the spring of 1999 and for 58 of the original 113 students for all three years.

Also unfortunately for the simplicity of presenting these analyses, as shown in Table 4a below, the overall grade point average of the entire sample declined over the three years in question from 2.9 to 2.8 to 2.5.

Table 4b: Individual student changes in Grade Point Average for school breakfast participation change groups

School breakfast change From pre USB to post USB	1997	1998	1999	GPA change 1998-99	GPA change 1997-99
No change (n=17)	2.7	2.6	2.5	- .17	- .27
Small increase (n=16)	2.8	2.5	2.3	- .21	- .53
Large increase (n=24)	3.0	3.0	2.8	- .18	- .20
Total (n=57)	2.9	2.8	2.5	- .19	- .31

Note: For change in school breakfast change participation = 5/99 5 day school breakfast participation rate [0%-100%] minus9/98 5 day school breakfast participation rate [0%-100%]; Range = .-88% to +100%;, mean change=+.58 [from .26 to .84]. Categories = No change [-88 thru +.19]; small increase = .20 thru +. 79; large increase = +.80 thru +1.13] Differences in mean GPA change for full yeae1998-99 - full year 1997-98 or 1996-97 for students whose change in school breakfast participation was negative to very small increase (no change) or showed a small or a large increase. For the change in GPA from 1998-99 vs 1996-97, F=1.19; p = .31 (ns);For the change in GPA from 1998-99 vs 1997-98, F=.03; p =.97 (ns) Differences between the means as shown in the first three columns and the change scores presented in the last two columns may differ due to rounding.

In the one year comparison, the differences between breakfast change groups in changes in GPA for the year before the MMFA program to the first full year of it were miniscule (varying by 4/100th of a grade and were statistically non significant.

In the two year comparison (from two years before the MMFA program started to the end of its first year) the students who had a big increase in their school breakfast participation showed a smaller decrease in their GPA (2/10 of a grade drop) than students in the other two groups. Although this difference was not statistically significant it was in the right direction, suggesting that the greater the increase in school breakfast participation the smaller the decrease in GPA.

Although this may not seem like a very positive finding, it is based on the reality that most students in this sample had worse grades the year the classroom breakfast program started than two years before. It seems likely that student grade point averages do decline slightly over the course of elementary school. As will be shown below, the average number of absences also increased slightly over the same period of time for these students.

The statistical technique called correlation provides a more powerful way to test the premise that there is a relationship between increase in school breakfast participation and a positive change in grades than the analysis of group means presented in Table 4a. In the current analysis, correlation plots the exact change in GPA against the exact change in school breakfast participation.

As shown below in Table 4b, using simple Pearson product moment correlations, the increase in the rate of school breakfast participation was significantly associated with both student grades at the end of the first year of the classroom breakfast program and with the amount of increase in their GPA. These findings suggested that students who ate breakfast at school most often had

better grades than students who ate breakfast at school less often and that the more that students increased their school breakfast participation, the more their grades improved.

Table 4c: Relationship between GPA and school breakfast participation change and rate

	Pearson correlation with GPA
School breakfast participation change from fall of 1998 to spring of 1999 (pre MMFA to post MMFA; range = -.88 thru + 1.0)	**r=.26, p. < .05**
School breakfast participation rate in spring of 1999 (post MMFA; range = 0.0 thru + 1.0)	**r=.22, p. < .05**

These findings replicate in a Maryland sample the findings from a recent study of a classroom breakfast program in Philadelphia (Murphy, et al, 1998) that showed significant associations between math grades and both the rate of school breakfast participation and the amount of increase in school breakfast participation

Similar and possibly stronger findings were obtained with regard to longitudinal changes in individual student attendance, although unfortunately it was still of a somewhat negative sort during the first year of the program. As noted above, in the sample as a whole, the average number of days absent for the first term of the 1998-99 school year was higher (worse; mean=4.0 days) than it had been in the first term of the 1996-97 school year (mean = 3.2 days). Table 5 presents data on the relationship between individual student absence rates and school breakfast participation.

As shown in the table, students who did not increase their school breakfast participation showed an increase of almost one additional day (.8) absent during the spring semester of 1998-1999 vs. spring semester 1997-98. Students who increased their school breakfast participation a lot increased their absence rate by only about one half (.6) of a day. Although this difference was not statistically significant, the difference in attendance rates approached statistical significance when a two-year window was used.

As shown in the table, from spring semester of 1996-97 to spring semester of 1998-99, the students who increased their school breakfast participation a lot showed a decrease of more than one full day of absences for the semester. Students who increased their school breakfast participation a little increased their absences by more than a day and students who did not increase their school breakfast participation were absent nearly one full day more during the spring semester than they had been two years earlier. This finding was statistically significant ($F=3.4$; $p < .04$).

Table 5: Individual student changes absences for school breakfast participation change groups.

School breakfast change from pre USB to post USB	1997	1998	1999	Attendance Change 1998-99	Attendance Change 97-99
No change (n=17)	4.1	4.1	4.8	+0.8	+0.8
Small increase (n=17)	2.2	2.9	4.0	+1.1	+1.8
Large increase (n=24)	5.0	2.8	3.5	+0.6	-1.4
Total (n=58)	3.9	3.2	4.0	+0.8	+0.1

For differences in number of absences from 1998 to 1999 for students who increased their school breakfast participation a lot, a little or not at all ($F=.9$; $p=.9$; non significant), For difference between 1997 and 1999, $F=3.4$, $p < .05$. Differences between the means as shown in the first three columns and the change scores presented in the last two columns may differ due to rounding.

As with the findings on grades, against a backdrop of a slight overall increase in the number of absences over two years of elementary school, data from the current suggested that students who had a large increase in their school breakfast participation showed a decrease in the number of days absent compared to their classmates from the same schools who did not increase their school breakfast participation or had only a small increase. In the case of attendance, for the students who had a large increase in school breakfast participation, their rates were actually better than they had been two years before. In the case of grades, their rate of decline was less steep.

Child hunger

One reason for the pattern of an overall worsening of grades and attendance for the children in this sample may lie in the poverty of some of their families. According to the standardized hunger questionnaire that was completed by the parents, many of the children in this sample came from families where hunger was an issue. Although these analyses are not complete and a full reporting of these findings will have to await a later version of this report, findings from the parent and student interviews suggest that using a standardized measure of child/family hunger, many of these students are at nutritional risk, either because they do not get enough to eat or because they do not get all of the nutrients they need.

The overall rate of hunger as reported by parents on the CCHIP survey in these three Maryland schools was 8%, with another 26% of all families coded as at risk for hunger, **a total of 34% of all these Maryland students who were coded as hungry or at risk. These rates were very similar to the rates of child hunger that were reported by the research team for an inner city sample from Boston (32% hungry or at risk) and a sample from Baltimore and Philadelphia (35% hungry or at risk)** and actually slightly higher than reported by the CCHIP group itself for a national sample (29% hungry or at risk).

The United States Department of Agriculture has just released findings from the fifth year of the large CSFII national surveys which it conducts in conjunction with the US Census. CSFII findings are similar in many ways to those reported by the CCHIP studies and show that despite the recent economic boom that has lifted the middle and upper classes in this country, for the poorest children, hunger is a continuing problem.

In the USDA sample which is representative of the US population as whole, the rate of hunger and food insecurity for children has remained relatively constant over the past five years (5% hungry and another 15% food insecure). Since rates of hunger are much higher in low-income families, the USDA, CCHIP, and Maryland hunger estimates are quite similar.

In the Maryland sample, as in other studies by the research team, hungry and at risk children were more likely to be missing breakfast and students who missed breakfast or were hungry were more likely to have a large number of psychological symptoms, although these differences failed to reach statistical significance in the Maryland sample.

Student nutrition

Seventy-two of the students in the interview study completed a standardized food frequency recall questionnaire prior to the start of the MMFA program and forty of these students completèd the same questionnaire at the end of the first year of MMFA. Although these data have not been fully analyzed, preliminary results suggest that between one quarter and one half of the students in this sample may be at nutritional risk either because they get too little to eat or because they do not get enough nutrients.

These findings about the prevalence of nutritional risk in students from low to moderate-income families from Maryland are very similar to findings by the research team from a similar sample in Philadelphia. Both samples showed similar rates of nutritional risk, with about one third of all students showing either a caloric intake of less than 50% of the RDA or two or more micro nutrients that were deficient at 50% or more of RDA. Preliminary analyses which could not be completed in time for this report suggest that in Maryland, as in Philadelphia, students who were at nutritional risk had more psychological problems and worse attendance, tardiness, and grades than students from the schools who were not at nutritional risk.

If (as is expected) these findings are hold up in the final analyses, they will provide a more direct causal link between lack of food and lack of academic success on the one hand and between an increase in school breakfast consumption, better nutrition, and better student outcomes on the other hand. For now, they at least suggest a plausible explanation for the positive effects that are associated with the classroom breakfast program.

FALL 1999 SURVEYS

METHODS

The Fall 1999 Survey of students, parents, and staff was sent to all 24 schools in the evaluation design. Four schools stated that they did not want to participate, leaving a total of 20 schools that said that they would be willing to complete the forms. As of 1/1/2000, 11 schools had mailed back the forms.

A slightly different survey form was distributed for each respondent type (student, parent, staff), with a core of one Likert-scaled question asked of all respondents and additional questions added for parents and staff. All questionnaires also provided room for at least two responses to open-ended questions. Results from these surveys will be reported by respondent type (e.g., students vs. parents vs. staff), with the Likert-scaled questions first, and followed by additional questions for that sample. Copies of each of these survey forms are appended to this report.

For each of the schools, the Principal Investigator initiated contact with the principal or her designee. A letter describing the evaluation and copies of the evaluation forms were faxed to each school and the Principal Investigator then discussed participation with the Principal. As noted above, twenty of the schools indicated that they would be willing to complete the forms.

In each of the schools, participation in the evaluation took less than an hour of the principal's time in setting up data collection procedures. Schools which agreed to participate were given $200 in consideration of their time. The staff survey took no more than 5 minutes of each staff member's time. Parents and students were asked to fill out the one-page survey forms for free. All data was returned the research team office at the Massachusetts General Hospital for analyses. Statistical analyses was done using SPSS for Windows Version 7.5.2.

RESULTS

Demographic data.

As shown below in Table 6, as of 2/1/2000 one thousand four hundred and nine subjects filled out one of three types on Fall Survey forms. Students made up 42% of the respondents, 27% were parents, and 31% were school staff. Five of the eight potential districts and twelve of the twenty-four potential schools sent data. All three of the continuing MMFA classroom breakfast schools, one of the original MMFA classroom breakfast schools that had dropped out, two of the six old comparison schools, three of the six new classroom breakfast schools, and three of the six new comparison schools sent data.

Table 6: Types of Respondents for each school.

	Children	Parents	Staff	Total
3 SECOND YEAR MMFA SCHOOLS				
Riverview Elementary (100%)	66 (40%)	50 (31%)	48 (29%)	164
South Lake Elementary (100%)	29 (39%)	12 (16%)	33 (45%)	74
Winter Street Elementary (100%)	43 (41%)	39 (38%)	22 (21%)	104
3 FIRST YEAR MMFA SCHOOLS				
Halls Crossroads (100%)	54 (50%)	17 (16%)	36 (34%)	107
Sandalwood Elementary (100%)	51 (42%)	21 (17%)	50 (41%)	122
Halstead Academy (100%)	39 (30%)	36 (28%)	55 (42%)	130
1 DROP OUT MMFA SCHOOL				
Sudlersville Elementary (100%)	31 (32%)	27 (28%)	38 (40%)	96
5 CONTROL SCHOOLS				
Middlesex Elementary (100%)	40 (30%)	36 (27%)	56 (42%)	132
Bester Elementary (100%)	23 (34%)	23 (34%)	21 (31%)	67
Martin Boulevard (100%)	46 (35%)	59 (45%)	27 (20%)	132
Havre de Grace School (100%)	37 (31%)	39 (33%)	42 (36%)	118
Watkins Mill Elementary (100%)	25 (33%)	24 (32%)	27 (36%)	76
TOTAL (100%)	**484 (37%)**	**383 (29%)**	**455 (34%)**	**1322**

Table 7 (below) shows the job titles of the staff that answered the survey. A total of 406 staff from five counties answered the job title survey question. 66 percent were teachers, 23% were in the other category, 4% were food service, 4% were administration, and nurses were 3%. There were an average of 32 parents (range = 12-59), 40 staff (range = 22-56), and 38 (range = 23-66) student respondents per school. As shown in Table 7, among the 406 school staff respondents who indicated their position, most (64%) were teachers but there were also 16 (4%) administrators, 11 (3%) food service staff, 11 (3%) school nurses, and 108 (26%) other staff (teacher's aides and assistants, housekeeping, etc.).

Table 7: Fall Staff Survey Positions of Respondents.

	Total
Teacher	260 (64%)
Administrator	16 (4%)
Food service	11 (3%)
Nurse	11 (3%)
Other	108 (26%)
Total	406 (100%)

Findings from the surveys are summarized in a series of figures that are appended to this report. In general these findings show that staff in the classroom breakfast schools were significantly more likely to report improvements in student behavior and attention than staff in the control schools and that students, parents and staff liked the free breakfast program a lot.

Student Survey

As of this writing, the analysis of the survey data is complete for only the student survey. For students, Question 1 was a Likert-scaled question assessing student satisfaction with their school breakfast program. Question 2 was an open-ended question asking if the school breakfast program had made a difference to them. Student responses to these questions are summarized below.

Question 1:

Question One asked students how they felt about their school's breakfast program. As shown below in Table 8, 484 students completed survey forms. In the sample of 138 students from the 2nd year MMFA schools, 90% reported that they liked the program a lot or a little. Only 10% of these respondents indicated that they thought the program was only so, so or did not like the program.

In contrast, 81% of the students in the first year MMFA classroom breakfast schools, 81% of the MMFA drop out schools, and 75% of the comparison schools reported that they liked their school's breakfast program a lot or a little. This difference among students from the different types of schools was statistically significant at $p < .001$ using the chi square statistic and showed that students in the classroom breakfast schools were significantly more satisfied with the school breakfast program.

Table 8: Student satisfaction with school breakfast program in MMFA and control schools.

	Like a lot	Like a little	So-so or Don't like	Total
3 continuing MMFA schools	100 (73%)	24 (17%)	14 (10%)	138 (100%)
3 new MMFA schools	70 (49%)	46 (32%)	28 (20%)	144 (100%)
1 MMFA school that dropped out	22 (71%)	3 (10%)	6 (20%)	31 (100%)
5 Control Schools	87 (51%)	40 (23%)	44 (26%)	171 (100%)

Note: Chi square =28.5, $p < .001$

Figure 5 in the Appendix shows the student responses for Question 1 in graphic form collapsed into just two categories (like a lot or like a little vs. ok, or don't like) and contrasts them with the responses by the parents and staff on the same question.

Question 2:

The second question on the survey asked if the student thought the school breakfast program had made any difference to him/her and if so, what. As summarized in Table 9 on the next page, out of the combined sample of 176 students in the MMFA classroom breakfast schools who answered this question, only 24% stated that the program had not made a difference to them, in contrast to 48% of the students in the comparison schools who said that their school breakfast program had made no difference.

Similarly, students in the MMFA schools listed more than twice as many positive differences that the breakfast program had made to them as compared to the students in the control schools (119 positive reasons vs. 54). Clearly the students in the MMFA schools felt that the classroom breakfast made more of a difference to them than the students in the traditional breakfast schools.

Table 9: Summary of Student Responses to open-ended question: Has your school's breakfast program made any difference to you? If so, what?

	MMFA	COMPARISON
TOTAL # OF STUDENTS	176	194
No difference	42 (24%)	92 (47%)
MAKES A DIFFERENCE:		
Helps me learn better	6	9
Helps me listen better	5	0
Can concentrate better*	10	3
Makes school easier	1	1
Gives me more energy	6	4
Not hungry anymore*	13	4
Helps me feel better	8	2
Helps me be healthy *	8	2
Gives me a good start	4	0
Get to school on time	2	4
Don't have to rush at home*	26	13
Chance for healthy breakfast	3	3
I do not have to ask for money	3	1
More variety than at home	5	4
Get to eat with my friends*	6	0
Can eat in the classroom	3	0
Makes a difference, but no reason *	10	4
TOTAL POSITIVE DIFFERENCES	119	54
No answer	19	17
Don't know/care *	0	9
No, I eat breakfast at home *	3	21

NOTE: MMFA STUDENTS ARE MORE THAN TWICE AS LIKELY TO LIST POSITIVE DIFFERENCES THAT THE BREAKFAST PROGRAM MAKES TO THEM AND HALF AS LIKELY TO SAY THE BREAKFAST PROGRAM MAKES NO DIFFERENCE. Starred items indicate a potentially important difference between MMFA and control group students.

Parent Survey

As of this writing, the analysis of the survey data is complete only for Likert-scaled questions on the parent survey. Like the student survey, Question 2 for parents assessed satisfaction with their school breakfast program. Question 3 asked parents about their child's satisfaction with the breakfast program. Questions 4a and 4b asked if the breakfast program had made a difference in the life of their family, and if so, if it had helped or hurt. Analysis for the open-ended questions 1 and 5 is in process. Question 1 was an open ended question asking if the school breakfast program had made a difference to them, and question 5 asked for parents to recommend changes to the breakfast program. Parent responses to questions 2-4 are summarized below.

Question 2:

Question Two asked parents how they felt about their school's breakfast program. As shown below in Table 10, 327 parents completed this question on the survey. In the sample of 99 parents from the 2nd year MMFA schools, 92% reported that they liked the program a lot or a little. Only 8% of all respondents indicated that they thought the program was only so, so or did not like the program.

In comparison, 92% of the parents in the first year MMFA CB schools, 78% of the MMFA drop out schools, and 85% of the comparison schools reported that they liked their school's breakfast program a lot or a little. Although this difference did not reach statistical significance in this form, it was close ($p. < .13$) and when the data were collapsed into just MMFA classroom breakfast vs. control schools, parents in the MMFA schools had a significantly greater chance of saying that they liked the program a lot or a little (92%) than parents in the control or drop out schools (84%; $p. < .05$)

Table 10: Parent satisfaction with school breakfast program in MMFA and control schools.

	Like a little Or Like a lot	So-so or Don't like	Total
3 continuing MMFA schools	91 (92%)	8 (8%)	99 (100%)
3 new MMFA schools	67 (92%)	6 (8%)	73 (100%)
1 MMFA school that dropped out	18 (79%)	5 (22%)	23 (100%)
5 Control Schools	112 (85%)	20 (15%)	132 (100%)
Total	288 (88%)	39 (12%)	327 (100%)

Question 3:

Question Three asked parents how their child felt about their school's breakfast program. As shown below in Table 11, 310 parents completed this question on the survey. In the sample of 97 parents from the 2nd year MMFA schools, 82% reported that their child liked the program a lot or a little. Only 18% of all respondents indicated that their child thought the program was only so, so or did not like the program.

In comparison, 73% of the parents in the first year MMFA schools, 80% of the MMFA drop out schools, and 70% of the comparison schools reported that they liked their school's breakfast program a lot or a little. Although this finding did not reach statistical significance, it did appear that parents in the old and new MMFA schools (combined) were more likely to report that their children liked the school breakfast program (78%) than parents of children in the MMFA drop out or control schools (combined).

Table 11: Parent report of child satisfaction with school breakfast program.

	Like a little Or like a lot	So-so or Don't like	Total
3 continuing MMFA schools	80 (82%)	17 (18%)	99 (100%)
3 new MMFA schools	54 (73%)	20 (27%)	73 (100%)
1 MMFA school that dropped out	14 (78%)	4 (22%)	18 (100%)
5 Control Schools	85 (70%)	36 (30%)	121 (100%)
Total	**233 (75%)**	**77 (25%)**	**310 (100%)**

Question 4a:

Question 4a asked parents if the breakfast program had made a difference in their families. As shown below in Table 12, 383 parents completed this question on the survey. Seventy-two percent of the parents in the new MMFA schools and 76% of the parents in the new MMFA schools reported that their school's breakfast program made a difference to their families. This was in contrast to the MMFA drop out and control schools where only 60% and 48% (respectively) of parents indicated that the school breakfast program had made a difference to their families. This difference was statistically significant ($p. < .001$).

Table 12: Parent report of whether the school breakfast program made a difference to their families.

	Made a difference	Did not make a difference	Total
3 continuing MMFA schools	72 (71%)	29 (29%)	101 (100%)
3 new MMFA schools	56 (76%)	18 (24%)	74 (100%)
1 MMFA school that dropped out	16 (59%)	11 (41%)	27 (100%)
5 Control Schools	86 (48%)	95 (52%)	181 (100%)

Question 4b:

Question 4b was a follow up to Question 4 and asked the parents who reported that the program had made a difference if this difference was positive or negative (if the breakfast program had helped or hurt their family). Since virtually all (98%) of the parents who said that the program had made a difference said that the difference was positive, this question was judged to be redundant and is not presented in any more detail here.

Staff Survey

As of this writing, the analysis of the survey data is complete only for Likert-scaled questions on the staff survey. The first question asked staff to list their job title (and their answers are summarized in Table 7 above). Like the student and parent surveys, Question 2 for staff assessed satisfaction with their school breakfast program. Question 3 asked staff about student satisfaction with the breakfast program, and question 4 inquired about frequency of student complaints of hunger. Questions 5a, 5b, 6a, and 6b elicited ratings from staff about student behavior and attentiveness. Questions 7a and 7b asked staff whether or not the breakfast program had increased their workload, and if so, if they minded. In question 8, staff indicated opinions on their district continuing (for MMFA schools) or beginning (for comparison schools) a free classroom breakfast program next year. Question 9a asked staff if they would recommend any changes in the classroom breakfast program. Analysis for question 9b, which allowed staff to elaborate on any suggested changes, is in process. Parent responses to questions 2-9a are summarized below.

Question 2:

Question two asked staff how they felt about their school's breakfast program. As shown below in Table 14, 397 staff completed this question on the survey. In the sample of 99 staff from the 2nd year MMFA schools, 94% reported that they liked the program a lot or a little. Only 6% of all respondents indicated that they thought the program was only so, so or did not like the program.

In comparison, 78% of the parents in the first year MMFA CB schools, 55% of the MMFA drop out schools, and 80% of the comparison schools reported that they liked their school's breakfast program a lot or a little. The continuing MMFA classroom breakfast schools that had had the program for two years reported by far the most satisfaction. This difference was statistically significant (p. < .001).

Table 13: Staff report of satisfaction with school breakfast program.

	Like a lot	Like a little	So-so or Don't like	Total
3 continuing MMFA schools	82 (83%)	11 (11%)	6 (6%)	99 (100%)
3 new MMFA schools	74 (55%)	30 (22%)	30 (22%)	134 (100%)
1 MMFA school that dropped out	8 (28%)	8 (28%)	13 (45%)	29 (100%)
5 Control Schools	77 (57%)	28 (21%)	30 (22%)	135 (100%)
Total	241 (61%)	77 (19%)	79 (20%)	397 (100%)

Note: Chi square =38.8, p < .001

Question 3:

Question three asked staff how their students felt about their school's breakfast program. As shown below in Table 15, 405 staff completed this question on the survey. In the sample of 101 staff from the 2nd year MMFA schools, 100% reported that their students liked the program a lot or a little. In comparison, 91% of the staff in the first year MMFA CB schools, 57% of the MMFA drop out schools, and 82% of the comparison schools reported that they liked their school's breakfast program a lot or a little. The continuing MMFA classroom breakfast schools that had had the program for two years reported by far the most satisfaction. This difference was statistically significant ($p. < .001$).

Table 14: Staff report of student satisfaction with school breakfast program.

	Like a lot	Like a little	So-so or Don't like	Total
3 continuing MMFA schools	96 (95%)	5 (5%)	0 (0%)	101 (100%)
3 new MMFA schools	94 (72%)	24 (19%)	12 (9%)	130 (100%)
1 MMFA school that dropped out	7 (25%)	9 (32%)	12 (43%)	28 (100%)
5 Control Schools	89 (61%)	30 (21%)	27 (19%)	146 (100%)
Total	286 (71%)	68 (17%)	51 (13%)	405 (100%)

Note: Chi square =70.9, p < .001

Question 4:

Staff answers to Question 4 provided some of the most troubling, and encouraging findings in the entire evaluation. The question asked staff how often during current school year they had heard students complain about hunger. The troubling finding is that nearly two thirds (65%) of the 446 staff respondents in these schools said that they had heard students complain of hunger sometimes or often. As shown in Table 15 below, the encouraging finding is that the reports of student hunger were significantly lower in the continuing (48%) and new (60%) MMFA schools than in the MMFA drop out schools (68%) or controls (77%). This difference was statistically significant ($p. < .001$).

Table 15: Staff report of frequency of student hunger complaints in the last year.

	Many times	Some-times	Never	Total
3 continuing MMFA schools	6 (6%)	43 (43%)	53 (52%)	102 (100%)
3 new MMFA schools	20 (15%)	62 (46%)	54 (40%)	136 (100%)
1 MMFA school that dropped out	4 (11%)	22 (58%)	12 (32%)	38 (100%)
5 Control Schools	20 (12%)	111 (65%)	39 (23%)	170 (100%)
Total	50 (12%)	238 (53%)	158 (35%)	446 (100%)

Note: Chi square =29.0, p < .001

Question 5a:

Staff ratings of changes in student attention and behavior are almost as important as the question of child hunger to the MMFA evaluation. Before examining the changes in behavior Question 5b, Question 5a asked how staff would rate the current level of student behavior during the current school year. This provides a baseline against which to compare the types of schools and their changes. As shown below in Table 16, 443 staff completed this question on the survey. Perhaps the most salient finding is that 2/3 of the staff in all of the schools reported student behavior to be only fair or poor. The differences between the types of schools were small and statistically non significant (p. < .14).

Table 16: Staff report of student behavior in the last year.

	Excellent	Very Good	Poor/Fair	Total
3 continuing MMFA schools	2 (2%)	34 (34%)	64 (64%)	100 (100%)
3 new MMFA schools	2 (2%)	30 (22%)	102 (76%)	134 (100%)
1 MMFA school that dropped out	0 (0%)	15 (42%)	21 (58%)	36 (100%)
5 Control Schools	4 (2%)	62 (36%)	107 (62%)	173 (100%)
Total	8 (2%)	141 (32%)	294 (66%)	443 (100%)

Note: Chi square =9.7, p < .14

Question 5b:

Question 5b asked staff if there had been any change in student behavior over the last two years (so that respondents from all schools would be referring to a pre MMFA period). As shown below in Table 17, 329 staff completed this question on the survey. In the sample of 68 staff from the 2nd year MMFA schools, 81% reported that student behavior was much better or a little better. In comparison, 70% of the staff in the first year MMFA classroom breakfast schools, 54% of the MMFA drop out schools, and 57% of the comparison schools reported that student behavior was much better or a little better in the last two years. This difference was statistically significant (p. < .01) and provides some of the strongest documentation to date that free classroom breakfast programs are associated with significantly improved student behavior and thus, presumably, an atmosphere at school that is more conducive to learning.

Table 17: Staff report of student behavior change over the last two years.

	Much better Or a little Better	Much worse, a little worse, or no change	Total
3 continuing MMFA schools	55 (81%)	13 (20%)	68 (100%)
3 new MMFA schools	75 (70%)	32(30%)	107 (100%)
1 MMFA school that dropped out	14 (54%)	12 (46%)	26 (100%)
5 Control Schools	73 (57%)	55 (43%)	128 (100%)
Total	**217 (66%)**	**112 (34%)**	**329 (100%)**

Note: Chi square =13.8 , p < .001

Question 6a:

Question 6a asked how staff would rate student attentiveness at school this year. As shown below in Table 18, 416 staff completed this question on the survey. Although 70% of the staff from the new and drop out MMFA schools and controls rated student attention to be fair or poor, only 59% of the staff in the schools that had had the MMFA program for two years reported that student attention was fair or poor, a difference that was marginally (p. < .10) significant. This finding suggests that the free classroom breakfast program may result in small but potentially important improvements in the absolute (as opposed to relative) level of student attention…but that these effects may not make a measurable impact until the program has run for many months.

Table 18: Staff report of student attentiveness in the last year.

	Excellent	Very Good	Poor/Fair	Total
3 continuing MMFA schools	6 (7%)	30 (34%)	51 (59%)	87 (100%)
3 new MMFA schools	2 (2%)	36 (28%)	89 (70%)	127 (100%)
1 MMFA school that dropped out	0 (0%)	10 (29%)	25 (71%)	35 (100%)
5 Control Schools	2 (1%)	49 (29%)	116 (69%)	167 (100%)
Total	**10 (2%)**	**125 (30%)**	**281 (68%)**	**416 (100%)**

Note: Chi square =11.6, p < .10

Question 6b:

Question 6b asked staff if there had been any change in student attentiveness…again over the last two years so that staff in all schools were comparing to a non MMFA period. As with Question 5b, staff answers to this question provide some of the most important findings of any study to date in documenting that student attentiveness improves in schools that begin free classroom breakfast programs.

As shown below in Table 19, 311 staff completed this question on the survey. In the sample of 64 staff from the 2nd year MMFA schools, 83% reported that student attentiveness was much

better or a little better than two years ago, in comparison to 64% of the staff in the first year MMFA classroom breakfast schools, 44% of the staff in MMFA drop out schools, and 44% of the comparison schools. This difference was statistically significant ($p. < .001$) and provides very strong evidence that students in classroom breakfast schools pay attention better than students in non classroom breakfast schools.

Table 19: Staff report of change in student attentiveness over the last two years.

	Much better Or a little Better	Much worse, a little worse, or no change	Total
3 continuing MMFA schools	53 (83%)	11 (17%)	64 (100%)
3 new MMFA schools	65 (64%)	36 (36%)	101 (100%)
1 MMFA school that dropped out	11 (44%)	14 (56%)	25 (100%)
5 Control Schools	53 (44%)	68 (56%)	121 (100%)
Total	**182 (59%)**	**129 (41%)**	**311 (100%)**

Note: Chi square =13.9 , p < .001

Question 7a:

Question 7a asked staff if the classroom breakfast program increased their workload. As shown below in Table 20, 455 staff completed this question on the survey. In the sample of 103 staff from the 2nd year MMFA schools, 26% reported that the breakfast program did increase their workload, and 74% replied that it did not increase their workload. In comparison, 49% of the staff in the first year MMFA Classroom breakfast schools, 16% of the MMFA drop out schools, and 13% of the comparison schools reported that the classroom breakfast program increased their workload. In the new MMFA schools, the percent of staff to indicate that the breakfast program did not increase their workload was 51%; in the MMFA drop out schools it was 84%, and in the comparison schools it was 87%. This difference was statistically significant ($p. < .001$) and does suggest that the classroom breakfast program is more work for teachers, although, as is shown in staff answers to the next question, the answer is that most do not mind the extra work.

Table 20: Staff report of whether their workloads increased due to school breakfast.

	Did increase workload	Did not increase workload	Total
3 continuing MMFA schools	27 (26%)	76 (74%)	103 (100%)
3 new MMFA schools	69 (49%)	72 (51%)	141 (100%)
1 MMFA school that dropped out	6 (16%)	32 (84%)	38 (100%)
5 Control Schools	23 (13%)	150 (87%)	173 (100%)

Note: Chi square =52.7, p < .001

Question 7b:

Question 7b asked the staff who had reported an increase in their workloads if they minded this increase. As shown below in Table 21, 145 staff completed this question on the survey. Although the staff in the classroom breakfast schools were significantly more likely to mind the extra work associated with the program, the percentage was actually very small (6%) in the schools that were in their second year of the program. This confirms the findings from the first year of the program which suggested that some staff do note and mind the increase in work for them associated with a classroom breakfast program, by the second year of the program, as staff have seen the benefits of the program and adjusted to the new procedures, the rate of staff dissatisfaction is very low. And even during the first few months of the program, only about 1/5 of the staff report that they mind the extra work.

Table 21: Staff report of their workload due to the breakfast program.

	Did increase Workload/ do mind	Did not increase/ don't mind	Total
3 continuing MMFA schools	6 (6%)	97 (94%)	103 (100%)
3 new MMFA schools	27 (19%)	114 (81%)	141 (100%)
1 MMFA school that dropped out	1 (3%)	37 (97%)	38 (100%)
5 Control Schools	3 (2%)	170 (98%)	173 (100%)

Note: Chi square =52.7, $p < .001$

Question 8:

Question 8 asked staff in the MMFA schools if the breakfast program should be continued next year, and staff in comparison schools if the free breakfast program should begin next year. As shown below in Table 22, 447 staff completed this question on the survey. In the sample of 104 staff from the 2nd year MMFA schools, 84% reported that the breakfast program should definitely continue next year, 17% that it should probably continue. None of the staff in continuing MMFA schools indicated that they did not care or that the program should be discontinued. In comparison, 56% of the staff in the first year MMFA Classroom breakfast schools, 24% of the MMFA drop out schools, and 47% of the comparison schools indicated that the classroom breakfast program should continue or begin next year. In the first year MMFA schools, 37% of staff thought the classroom breakfast program should probably continue, and 7% did not care or thought the program should be discontinued. In the MMFA drop out schools, 25% of staff thought the program should begin again in their school next year, 57% of staff thought it should probably begin again, and 19% did not care or thought the breakfast program should not begin. In the comparison schools, 47% of staff reported that the breakfast program should definitely begin in their schools next year, 32% thought it should probably begin, and 22% did not care or thought it should not begin in their schools next year.

Table 22: Staff report of whether the breakfast program should continue/begin in their district.

	Definitely Continue	Probably Continue	Don't Care/ Discontinue	Total
3 continuing MMFA schools	87 (84%)	17 (16%)	0 (0%)	104 (100%)
3 new MMFA schools	78 (56%)	51 (37%)	10 (7%)	139 (100%)
1 MMFA school that dropped out	9 (24%)	21 (57%)	7 (19%)	37 (100%)
5 Control Schools	78 (47%)	53 (32%)	36 (22%)	167 (100%)

Question 9a:

Question 9a asked staff if they would recommend any changes to the breakfast program. As shown below in Table 23, 420 staff completed this question on the survey. In the sample of 101 staff from the 2nd year MMFA schools, 35% reported that they would recommend changes, and 65% reported that they would not. In comparison, 49% of the staff in the first year MMFA Classroom breakfast schools, 28% of the MMFA drop out schools, and 29% of the comparison schools reported that they would recommend changes in the breakfast program. In the first year MMFA schools, 51% of staff indicated that they would not recommend changes to the program. In the MMFA drop out schools, this number was 72%, and in the comparison schools it was 71%. Question 9b asked staff to list the changes they would recommend. The analysis of this open-ended question is presently being analyzed.

Table 23: Staff report of whether or not they would recommend changes to the breakfast program.

	Changes	No changes	Total
3 continuing MMFA schools	35 (35%)	66 (65%)	101 (100%)
3 new MMFA schools	61 (49%)	64 (51%)	125 (100%)
1 MMFA school that dropped out	10 (28%)	26 (72%)	36 (100%)
5 Control Schools	46 (29%)	112 (71%)	158 (100%)

Conclusions

As noted at the outset of this report, several types of data are still coming in and being analyzed. Several additional schools have promised to send in their Fall survey data and the principal survey about current and past year attendance, tardiness, disciplinary incidents, etc are still being analyzed. Analyses of the very complex nutritional surveys from before and after the MMFA program began are just now getting underway and we still hope to do more with the standardized test score analyses.

For now it seems clear that the universally free classroom breakfast program adopted by these Maryland schools has been associated with an improvement in student achievement, behavior, and attention and a decrease in school absences and complaints of hunger. However, the findings presented here should be qualified in a number of ways. We still lack the definitive proof about program effects that only true experimental designs can provide. As noted earlier, the evaluation of the Federal demonstration project should provide this level of rigor but its findings will not be available until the spring of 2002 at the earliest. In the meantime, the continuation and expansion of the MMFA program and continued evaluation of its effects clearly justified.

References

Murphy, J. M., Kopits, I.M, Hicks, R.C., Marinaccio, J. & Kleinman, R. Effects of a Universally Free, In-Classroom School Breakfast Program; Results from the First Year of the Maryland Meals for Achievement Study. Massachusetts General Hospital, Cambridge, MA. May 18, 1999.

Appendix A

Figures for the
Maryland Meals for Achievement
Year II Interim Report

What is the impact of a free classroom breakfast program on student achievement?

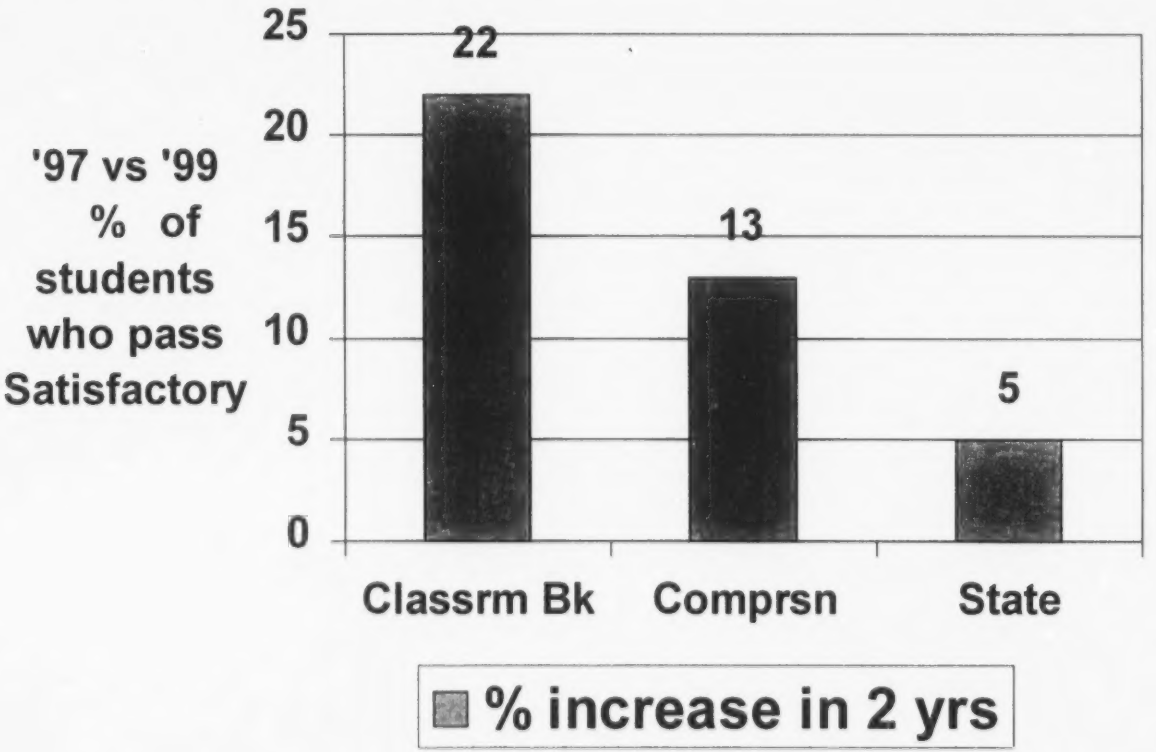
IT HELPS!

- School record and survey data from the state of Maryland
- Evaluation Summary 2/23/2000
- Michael Murphy, Ed.D. Mass General Hospital/ Harvard Medical School

School-wide data: MSPAP and Attendance Rates

- Methods: Data taken from state website for 5 MMFA CB schools vs 5 comparison schools vs Maryland averages for all elementary schools for full year before MMFA program (1996-97) vs first year of program (1998-99);
- MSPAP: Total school composite, all subjects: percent of all students passing as satisfactory;
- Attendance: full year attendance rate

Greater MSPAP gains in classroom breakfast schools than in comparison schools or state averages for 2 years before vs. 1 year after MMFA program starts

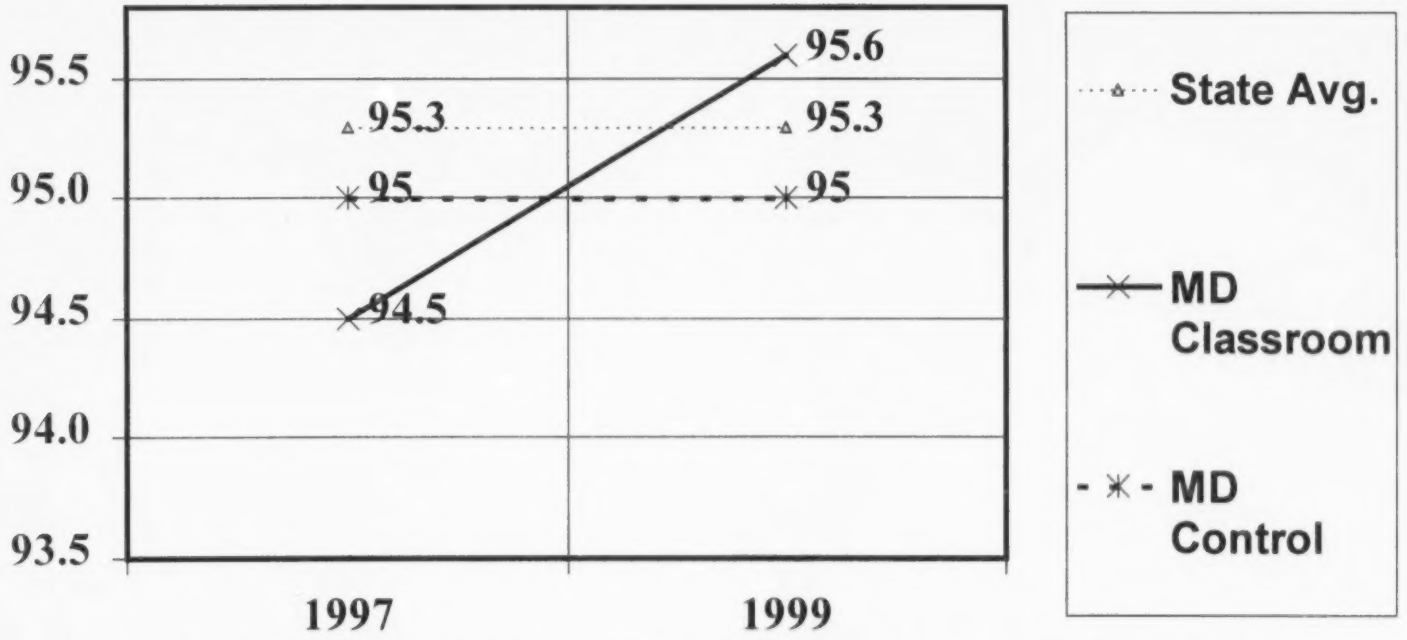


Average daily attendance rates improve more for classroom breakfast schools

In MMFA schools: Attendance increases 2 days from 170 to 172 per year

In MMFA Control schools: Attendance stays same at 171 per year

In MD state average: Attendance stays the same from 172 days per year



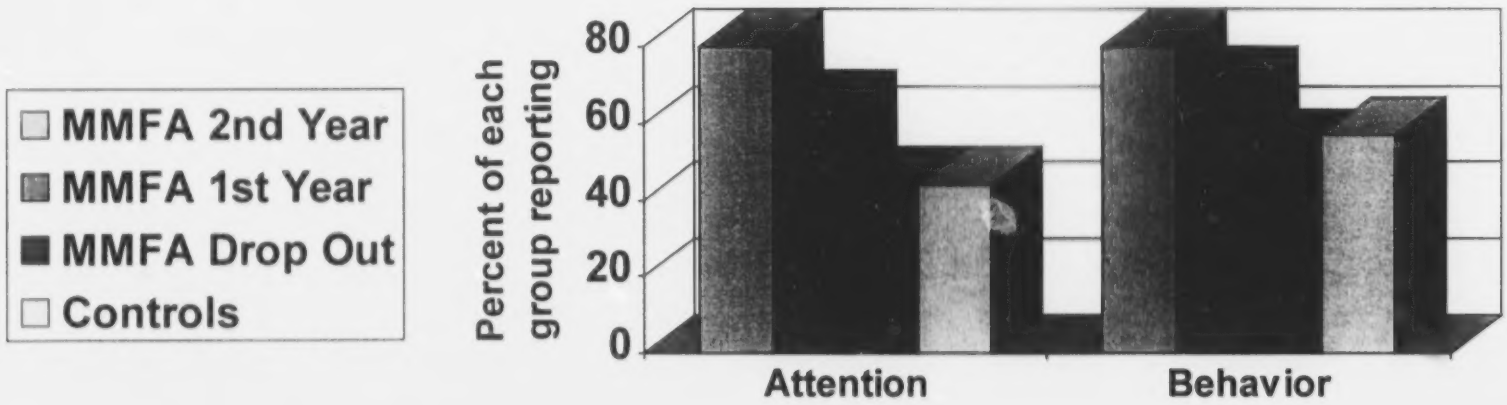
[1]Note: Free Classroom Breakfast Program began c. 9/1/98 in all schools. Chart contrasts Average Daily Attendance in 5 Maryland Meals for Achievement and 31 Baltimore City Classroom Breakfast Schools vs 5 MMFA Comparison Schools from same counties 15 Baltimore City Comparison Schools for year before(1997) and year after (1999) programs started; difference is marginally significant ($p < .08$) using oneway ANOVA

Survey data from: Staff, parents, & students

- Methods: One page questionnaire to staff, parents, students after first semester;
- Respondents:
  - 50 students and 50 parents and
  - all teachers, administrators, nurses, food service, and housekeeping staff
  - from 12 MMFA schools and 12 comparison schools
- Objectives: Obtain assessments of changes in student behavior, attention, complaints of hunger, satisfaction with school breakfast program

Staff report: attention & behavior improve more in MMFA schools than in controls

Has there been improvement since two years ago in:

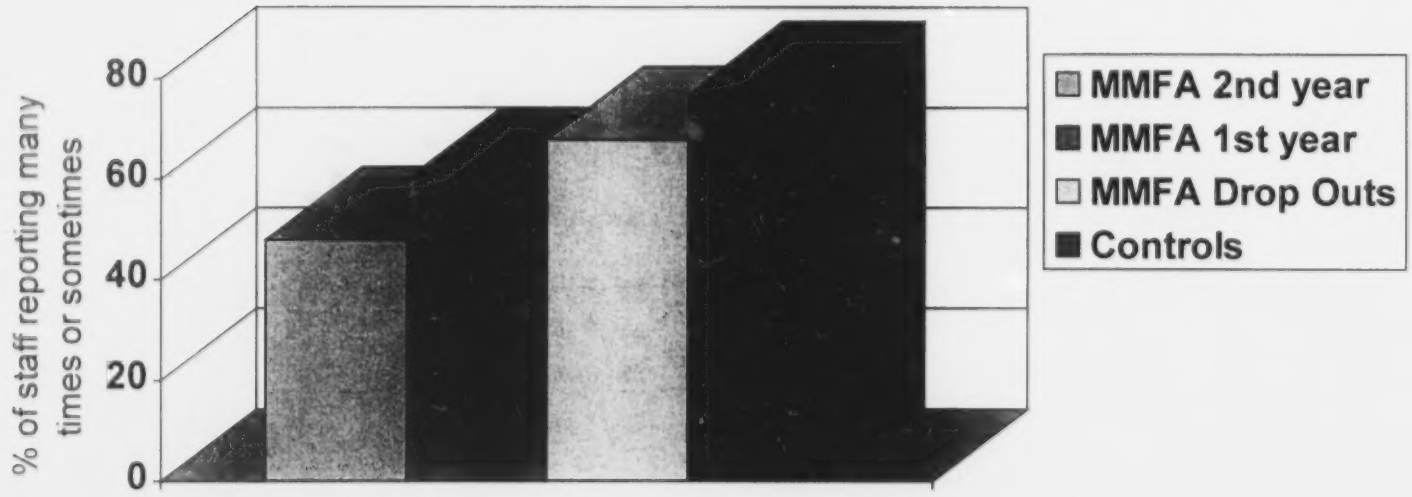


Note: Combined respondents from all job categoies combined

Ratings by 68 staff in MMFA 2nd yrear schools, 107 in MMFA 1st year schools, 26 staff in drop out schools and 97 staff in control schools for the behavior question. All differences significantly significant (chi-square p<.0001)

Students complain of hunger and aches & pains significantly less often in MMFA schools than in controls

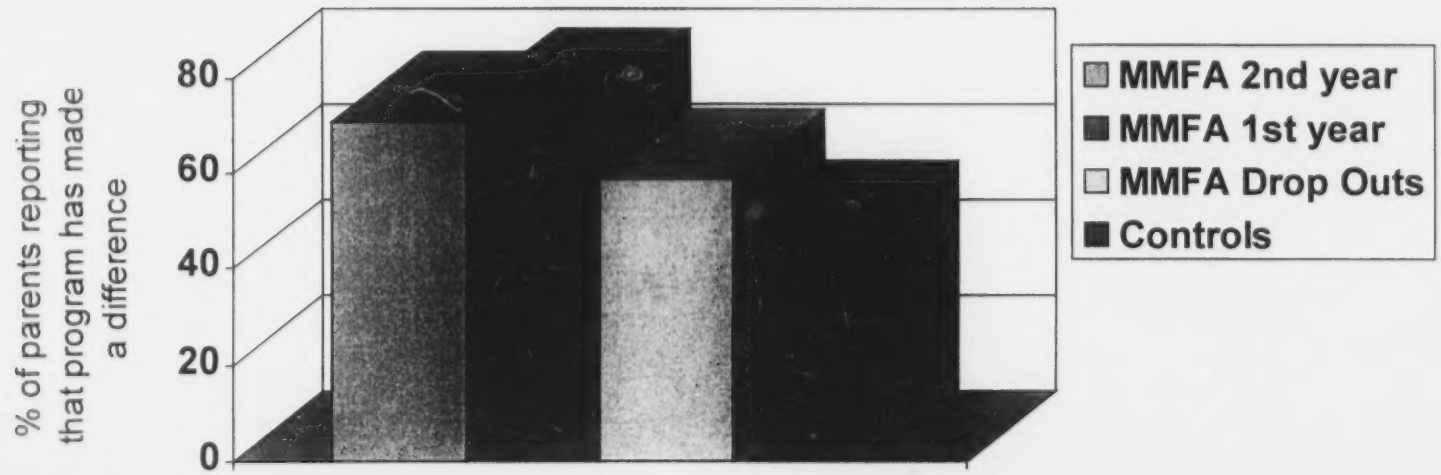
How often this school year have you heard students complain of hunger?



Ratings by 102 staff in MMFA 2nd year schools, 136 staff in MMFA 1st year schools, 38 staff in drop out schools and 170 staff in control schools for the hunger question. All differences significantly significant (chi-square $p<.001$)

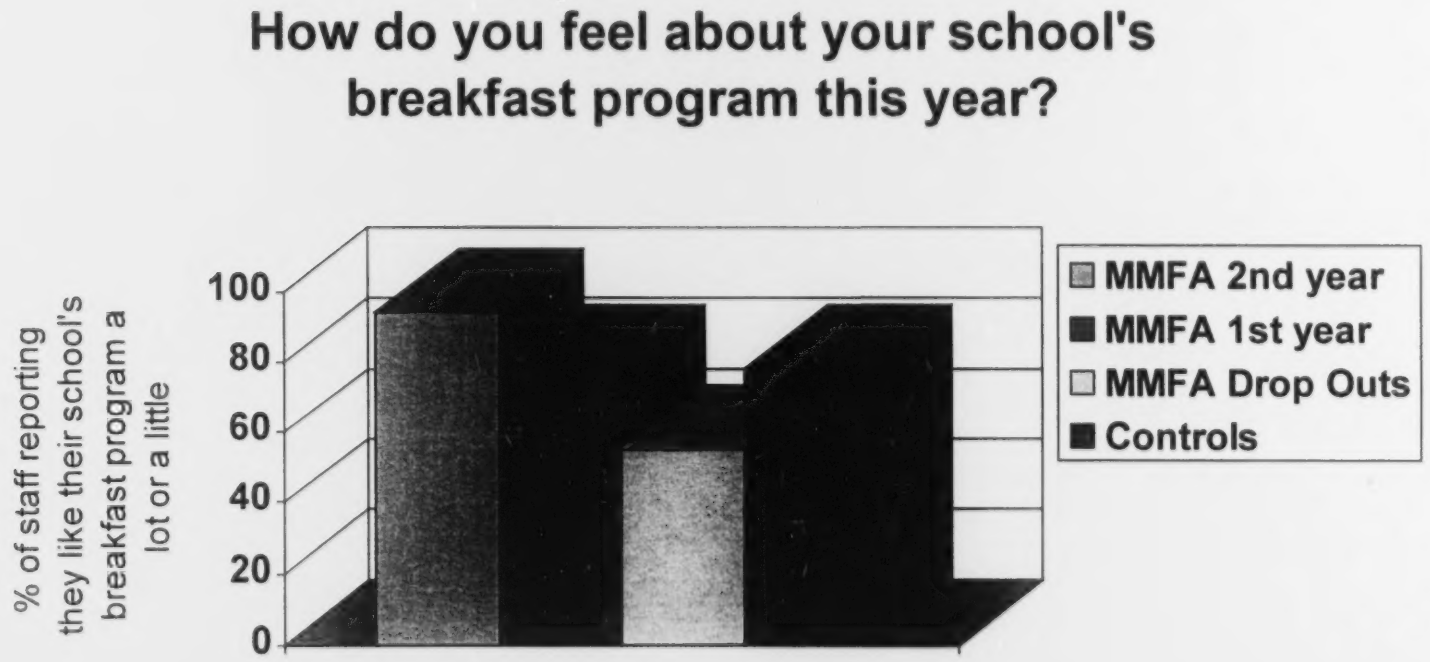
Parents more likely to report that MMFA program makes a difference than old program

Has your child's school breakfast program made a difference to your family's life?



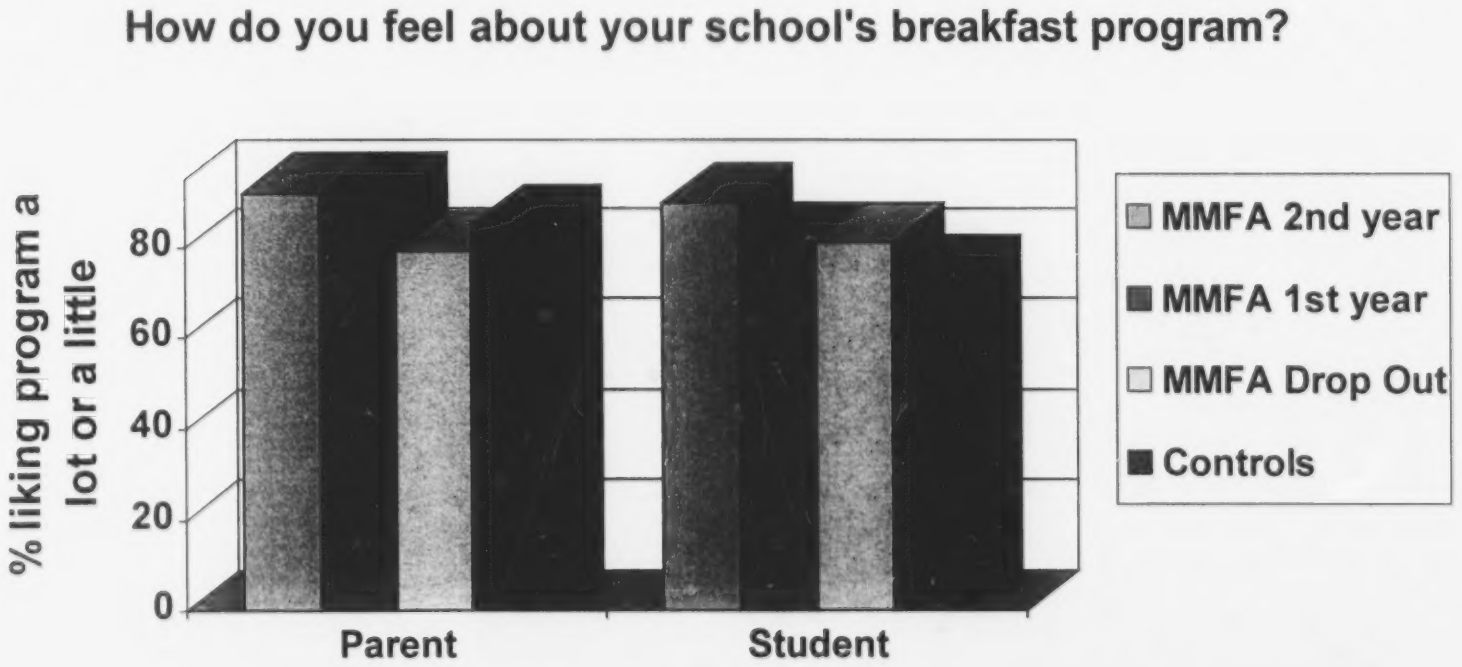
Ratings by 101 parents in MMFA 2nd year schools, 74 parents in MMFA 1st year schools, 27 parents in drop out school and 98 staff in control schools.
Difference statistically significant (chi-square p<.001)

MMFA program associated with increased staff satisfaction with school breakfast



Ratings by 99 staff in MMFA 2nd year schools, 134 staff in MMFA 1st year schools, 29 staff in drop out school and 135 staff in control schools.
Difference statistically significant (chi-square $p<.001$)

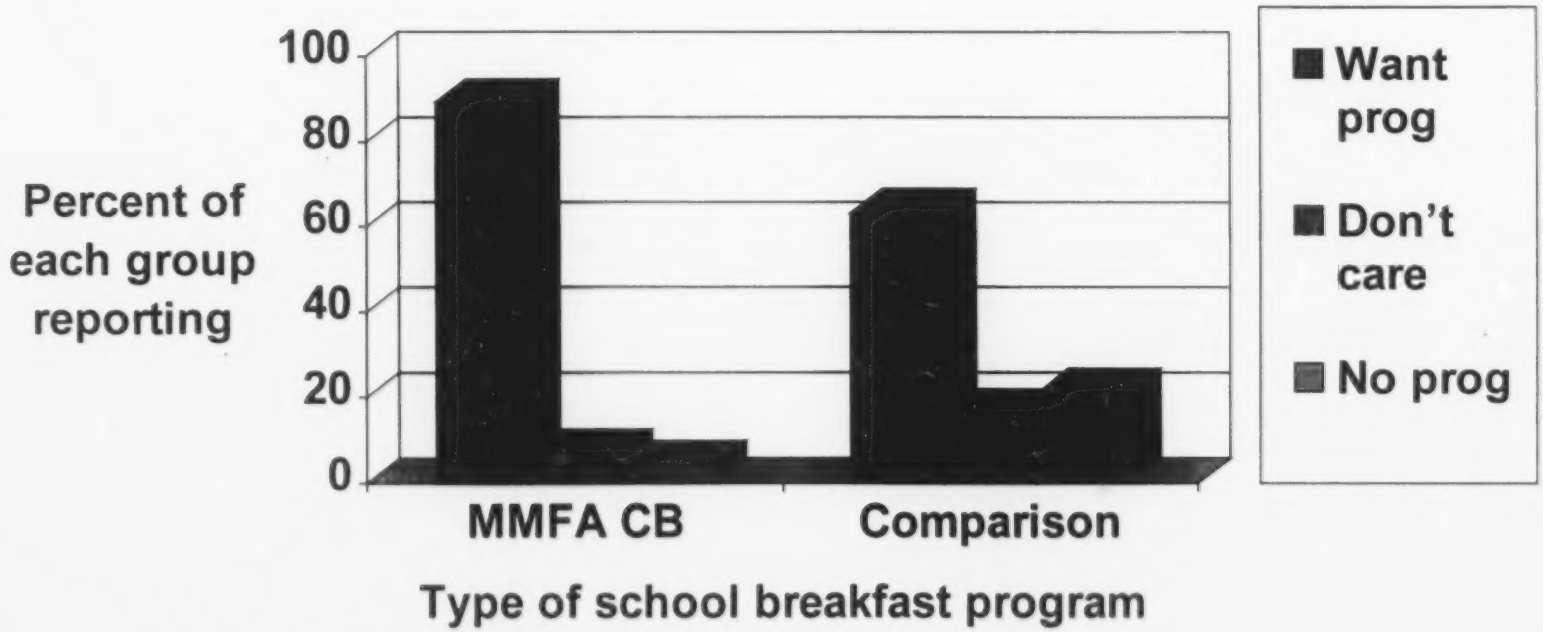
MMFA program associated with increased parent and student satisfaction with school breakfast



Ratings by 138 students in MMFA 2nd year schools, 144 students in MMFA 1st year schools, 31 students in drop out schools and 171 staff in control schools for the child question. For parent question there were 99 in the 2nd year group, 73 in the 1st year group, 23 in the drop out group, and 132 in the control group. Child differences significant (chi-square $p<.01$); parent differences NS ($p< .17$).

Most staff in MMFA schools want the program to continue and...

Staff in control schools want to try the program



Ratings by 243 staff in MMFA schools and 204 staff in control schools.
All differences significantly significant (chi-square p<.0001)

APPENDIX B
MMFA MEASURES

November 2, 1999

Dear Survey Administrator:

Thank you for agreeing to taking the time to make sure that our Maryland Meals for Achievement Classroom Breakfast Fall Surveys are processed in your school. All data are anonymous, so no names or consent forms are necessary. This study is approved by your school's Research Office and by the MGH Human Subjects Committee.

Because the Food and Nutrition Department of the Maryland state Department of Education cares so much about your opinion, they have agreed to allocate money to provide an incentive for your participation in this project. Each school that gets at least 75% of staff and 50% of the parents and students in each of the two selected classrooms to complete the survey forms by December 1 will receive a gift of $200.

To make the process simpler, we have written out these instructions:
1.The surveys are color coded for your convenience:
Yellow = Staff Survey Blue = Parent Survey Green = Child Survey

2.Please make sure that every staff member has an opportunity to fill out this survey.

3.The teachers of the selected classrooms will administer the surveys to the students and give them one to take home to their parents. Once they are retrieved from the students by the teachers, they should be given back to you.

4. Once you have been given all of the completed surveys, please call Emunah Rankin in Dr. Murphy's office. She will then arrange to have the surveys picked up from your school.

5.A billing form for the $200 that we are going to pay you for returning 75% of the Staff Forms and 50% of the parents and child surveys is included in the packet. Please fill it out and include with the forms when the data get picked up. **We need the completed surveys back by December 1, 1999.**

If you have any questions or problems, please call Emunah Rankin in Dr. Murphy's office. The toll free number is 877-868-9656. You may also call Shelly Terry, the Director of the Maryland State Department of Education Food and Nutrition Division at 410 767-0199. Once again, thank you for your help in our evaluation of the Maryland Meals for Achievement Breakfast Program.

Sincerely,

Michael Murphy, Ed.D.
Staff Psychologist
Massachusetts General Hospital

Emunah Rankin
Research Assistant
Massachusetts General Hospital

MARYLAND MEALS FOR ACHIEVEMENT
FALL STAFF SURVEY
FOR CLASSROOM BREAKFAST PROGRAM AND COMPARISON SCHOOLS

[for teachers, administrators, food service staff and school nurse in November of 1999]

The state of Maryland is collaborating with researchers from Massachusetts General Hospital to evaluate the impact of a school breakfast program that is served in the classroom, completely free to all students. This program is being tried out in your school district and we are surveying all teachers, administrators, food service staff, and school nurses in participating classroom breakfast schools and in comparison schools from the same districts to get staff feedback. You do not have to participate in this survey but we would appreciate your help. Your answers will be completely confidential.

1. Are you a: 1) teacher 2) administrator 3. food service staff 4) nurse 5) other

2. How do you feel about your school's breakfast program this year?
Like it a lot___ Like it a little___ Think it's ok, or just so-so___ Do not like it____ Don't know____

3. Overall, how do you think the students feel about your school's breakfast program this year?
Like it a lot___ Like it a little___ Think it's ok, or just so-so___ Do not like it____ Don't know____

4. Thinking back over just this past school year, how often have you heard students complain of hunger or aches or pains that you think may be due to hunger?
___ Many times ___ Some times ___ Never (About how many times?_____)

5a. Overall, how would you rate student behavior at your school?
___Excellent ___Very Good ___Fair ___ Poor ___Don't know/Can't rate

5b. Do you think there has been any change in behavior over the past two years (since 1997-1998)?
__Yes, much better __Yes, a little better __A little worse ___Much worse __No change __Cant rate

6a. Overall, how would you rate student attentiveness at your school?
___Excellent ___Very Good ___Fair ___ Poor ___Don't know/Can't rate

6b. Do you think there has been any change in student attentiveness over the past 2 years (since 97-98)?
__Yes, much better __Yes, a little better __A little worse ___Much worse __No change __Cant rate

7a. Does your school's breakfast program increase your workload? ___Yes ___No
7b. If yes, do you mind? ___Yes ___No

8. Should your district continue [or start] a classroom breakfast program in your school next year?
___ Yes, definitely ___ Yes, probably ___ Don't care ___ No, discontinue the program

9a. Would you recommend any changes to the breakfast program? ___Yes ___ No
9b. If yes, what changes? _____

MARYLAND MEALS FOR ACHIEVEMENT
FALL CHILD SURVEY
[for students in three homerooms (older grades) in the MMFA schools in November, 1999]

The state of Maryland is collaborating with researchers from Massachusetts General Hospital to evaluate the impact of a school breakfast program that is served in the classroom, completely free to all students. This program has been tried out in your school district and we are surveying about one hundred students here to get their feedback about the school breakfast program and how it affects students. You do not have to participate in this survey but we would appreciate your help. Your answers will be completely confidential.

1. How do you feel about the classroom breakfast program?
___LIKE IT A LOT ___LIKE IT A LITTLE ___THINK IT'S OK OR DON'T CARE
___DO NOT LIKE IT ___DON'T KNOW

2. Has the classroom breakfast program made any difference to you?
If so, what?_____

3. What changes would you recommend in the breakfast program?
_____

MARYLAND MEALS FOR ACHIEVEMENT
FALL PARENT SURVEY
[for parents in three homerooms (older grades) in each of the MMFA Schools in November, 1999]

The state of Maryland is collaborating with researchers from Massachusetts General Hospital to evaluate the impact of a school breakfast program that is served in the classroom, completely free to all students. This program has been tried out in your school district for the past two school years and we are surveying about one hundred students and parents from each school district to get their feedback about the school breakfast program and how it affects students. You do not have to participate in this survey but we would appreciate your help. Your answers will be completely confidential.

1. What impact has the classroom breakfast program had, from your perspective?

_____

_____

2. How do <u>you</u> feel about the classroom breakfast program?
___LIKE IT A LOT ____LIKE IT A LITTLE ___ THINK IT'S OK OR JUST SO-SO
___DO NOT LIKE IT ___NOT APPLICABLE ___DON'T KNOW

3. What does your child say about the classroom breakfast program?
___LIKES IT A LOT LIKES IT A LITTLE ____ THINKS IT'S OK OR JUST SO-SO ___DOES NOT LIKE IT ___NOT APPLICABLE ___DON'T KNOW

4a. Has the classroom breakfast program made a difference in your family's life? ___Yes ___No
4b. If yes, has the program helped or hurt your family ? ___Helped ___Hurt ___Don't know

5. What changes would you recommend in the breakfast program?

_____

_____

Billing Form

December 1, 1999

Dear Dr. Murphy:

Please reimburse the _____ School for the work we did in completing the Fall Survey for the Maryland Meals for Achievement In-classroom Breakfast Program Evaluation.

We have:
_____ teachers
_____ school nurse(s)
_____ administrators
_____ housekeeping staff
_____ food service staff
_____ TOTAL STAFF

All of these staff were asked to fill out the forms.

We have enclosed: _____ completed forms, which is _____ percent of all staff.

We have:
_____ classrooms designated to participate in the study and _____ children in these classes. All children in the selected classrooms were asked to fill out the forms and to take a form home for a parent to fill out, and we have enclosed: _____ completed child forms, which is _____ percent of all children asked to participate. _____ completed parent forms, which is _____ percent of all parents of students in the designated classrooms.

_____

All schools that get 75% of staff and 50% of students and parents to fill out a survey by December 1 will receive $200.

Please send us a check for $200,and make the check payable to: _____

Please mail the check to:

Our school is a nonprofit institution and our tax ID number is: _____

Sincerely,

School Principal

Maryland Meals for Achievement School Record Evaluation

December 1, 1999

Dear _____name of School Principal:

Thank you for participating in the Maryland Meals for Achievement Classroom Breakfast Program Evaluation. In both the classroom breakfast schools and in the control schools we have already asked principals and other staff to compare student attention, behavior and other areas of interest this year with the same areas last year. But to complete our "snapshot" of life in the schools before and after the program started, we are asking you to provide data on a few of the simplest school outcome indicators.

We know how busy you are and the Food and Nutrition Program of the Maryland State Department of Education has graciously agreed to donate the funding so that we can provide a small incentive of $200 for your time. Principals who fill out the enclosed form and fax it back by December 15 will receive a check for $200 by return mail from the evaluation team, as well as the gratitude of the Maryland State Department of Education and the good wishes of all of the students who benefited from the program this year.

Sincerely,

Shelly Terry
Director of Food and Nutrition
Maryland State Department of Ed.
410 767 0199

Michael Murphy
Evaluator
Maryland Meals for Achievement
617 724 3163
fax: 617 726 9219

Maryland Meals for Achievement School Record Evaluation

Your name _____ Your fax number _____

Your phone number _____ Name of contact person, if not you_____

To whom should we make out the check (if not you)? _____

Where shall we mail the check? _____ _____

Name of This School_____

1999 (This Year)

This school's enrollment as of 9/99 _____

Average daily **attendance** *number* 9/99_____

Average daily **attendance** *number* 10/99_____

Average daily **attendance** *number* 11/99_____

Average daily **tardiness** *number* 9/99_____

Average daily **tardiness** *number* 10/99_____

Average daily **tardiness** *number* 11/99_____

Average daily **office referrals** *number* 9/99_____

Average daily **office referrals** *number* 10/99_____

Average daily **office referrals** *number* 11/99_____

Number of **suspensions*** for month 9/99_____

Number of **suspensions*** for month 10/99_____

Number of **suspensions*** for month 11/99_____

Number of **visits to nurse** for month 9/99_____

Number of **visits to nurse** for month 10/99_____

Number of **visits to nurse** for month 11/99_____

1998 (Last Year)

This school's enrollment as of 9/98_____

Average daily **attendance** *number* 9/98_____

Average daily **attendance** *number* 10/98_____

Average daily **attendance** *number* 11/98_____

Average daily **tardiness** *number* 9/98_____

Average daily **tardiness** *number* 10/98_____

Average daily **tardiness** *number* 11/98_____

Average daily **office referrals** 9/98_____

Average daily **office referrals** 10/98_____

Average daily **office referrals** 11/98_____

Number of **suspensions*** for month 9/98_____

Number of **suspensions*** for month 10/98_____

Number of **suspensions*** for month 11/98_____

Number of **visits to nurse** for month 9/98_____

Number of **visits to nurse** for month 10/98_____

Number of **visits to nurse** for month 11/98_____

Overall, how satisfied are the students, parents, and staff with the breakfast program at your school?
___Very satisfied __Satisfied ___Think its okay ___ Not Satisfied.

Overall, how would you rate the academic achievement of the students in your school this year?
___Excellent __Very Good ___Good ___ Fair ____Poor

Please fax this information directly to the evaluation team at 617 726 9219 by 12/15/99 or call 877 868 9656 (a toll free call) and ask for Emunah Rankin if any questions.